

Claim Amendments

Please amend the claims to be as follows.

1. (currently amended) A method of processing a packet sent to a provider network, the method comprising:
receiving the packet via a user port of an edge switch of the network, wherein the user port is an input port of the edge switch;
determining forwarding and routing by the edge switch based on a user VLAN identifier (VID) of a user VLAN tag for the packet; and
double VLAN tagging by inserting a provider VLAN tag, including a provider VID, into the packet at a provider port of the edge switch prior to transmission of the packet via ~~[[a]] the provider port of the edge switch, wherein the provider port is an output port of the edge switch.~~
2. (original) The method of claim 1, further comprising:
forwarding and routing the packet by a middle switch based on the provider VLAN tag.
3. (original) The method of claim 1, wherein the packet received includes a user VLAN tag, and wherein the user VID is derived from the user VLAN tag.
4. (original) The method of claim 1, wherein the packet received does not include a user VLAN tag, and wherein the user VID is assigned to be a port VID associated with the user port.
5. (original) The method of claim 1, wherein the provider VID comprises a VID of a destination VLAN.

6. (original) The method of claim 1, wherein the provider VID comprises a port VID associated with the input port.
7. (currently amended) The method of claim 1, wherein the edge switch determines a class of service (COS) for the packet based on the user VLAN tag.
8. (currently amended) The method of claim 1, wherein the edge switch determines a security action for the packet based on the user VLAN tag.
9. (original) The method of claim 1, further comprising:
receiving the packet by a provider port of a second edge switch of the network; and
stripping the provider VLAN tag from the packet.
10. (original) The method of claim 9, wherein the packet is routed to more than one middle switch before arriving at the second edge switch.
11. (currently amended) A switch apparatus for processing a packet sent to a provider network, the apparatus comprising:
a user port for receiving the packet, the user port being an input port of the switch apparatus;
forwarding logic for determining forwarding and routing based on a user VLAN identifier (VID) of a user VLAN tag for the packet; and
a provider port that inserts a provider VLAN tag, including a provider VID, into the packet prior to transmission of the packet such that the transmitted packet has at least two VLAN tags, the provider port being an output port of the switch apparatus.

12. (currently amended) A system for processing packets sent to a provider network, the system comprising:
- a first switch configured to receive a packet via a user port, to determine routing and forwarding for the packet based on a user VID of a user VLAN tag, and to insert a provider VLAN tag into the packet at a provider port prior to transmission of the packet such that the transmitted packet has at least two VLAN tags therein; and
 - a second switch configured to receive the packet having at least two VLAN tags via a provider port, to strip the provider VLAN tag from the packet at the provider port, and to determine routing and forwarding for the packet based on the user VID for the user VLAN tag.
13. (original) The system of claim 12, further comprising at least one middle switch communicatively coupled between the first and second switches.
14. (original) The system of claim 12, further comprising utilization of a class of service (COS) for routing and forwarding of the packet that is based on the user VID.
15. (original) The system of claim 12, further comprising determining a security action for the packet based on the user tag.
16. (original) A method of routing and forwarding a packet using double Q tagging to create a tunnel between a user port of a first switch and a user port of a second switch, wherein a user-expected service level is provided in relation to traffic flowing through the tunnel.
17. (currently amended) The method of claim 16, wherein the user-expected service level comprises a quality of service level for the traffic.

18. (original) The method of claim 16, wherein the user-expected service level comprises a security action for the traffic.
19. (currently amended) An apparatus for processing a packet sent to a provider network, the apparatus comprising:
- means for receiving the packet via a user port of an edge switch of the network, the user port being an ingress port for the edge switch;
 - means for determining forwarding and routing by the edge switch based on a user VLAN identifier (VID) of a user VLAN tag for the packet; and
 - means for inserting a provider VLAN tag, including a provider VID, into the packet at a provider port of the edge switch prior to transmission of the packet via ~~[[a]]~~ the provider port of the edge switch, the provider port being an egress port of the edge switch.